

2.4 CUMULATIVE IMPACTS

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

2.4.1 CUMULATIVE ANALYSIS

This cumulative analysis determines whether the Build Alternative in combination with other approved or foreseeable projects would result in a significant cumulative impact, and, if so, whether the Build Alternative's contribution to the cumulative impact would be considerable. Reasonably foreseeable future projects include land use developments and other transportation improvements that are planned and funded and would be located near the proposed Build Alternative improvements.

Planned land use developments would include:

- Redevelopment of the Solano Fairgrounds Property
- Winco Foods Store

Cumulative traffic volumes were prepared, based on the latest version of the Solano-Napa Phase II countywide transportation model. Modifications to the model were made to improve the representation of the roadway network within the traffic study area, and to ensure that the model accurately reflected planned and funded land-use development and transportation projects expected to be in place by 2015 and 2035.

2.4.2 ISSUES WITH NO ADVERSE EFFECT

If a project would not result in a direct or indirect impact on a resource, then it will not contribute to a cumulative impact on that resource. The environmental resource areas for which a project has been found to have no adverse effect include parks and recreational facilities, coastal zone, wild and scenic rivers, farmlands/timberlands, utilities, emergency services, and energy.

The impact used in the cumulative impact analysis is the net impact (i.e., Build Alternative impact minus proposed minimization and/or mitigation measures). For resource areas where the impact would be fully offset by the proposed minimization and/or mitigation measures, there is no contribution to cumulative impacts from the project. The environmental analysis conducted for the project has determined that the project would not result in a net impact on any resource, with the exception of noise. A discussion of potential impacts to jurisdictional wetlands and other water features is also included in this section to document how the proposed avoidance and mitigation measures in **Subsection 2.3.2** would completely offset adverse effects from the Build Alternative.

Without the Build Alternative, much of the local roadway network operations would deteriorate to unacceptable levels of service, given the estimated traffic volumes generated by the approved development and planned growth in the area. The Build Alternative would have a beneficial impact on cumulative traffic conditions, as the proposed improvements are expected to relieve congestion and improve traffic flow on the local roadway network (See **Subsection 2.1.3**).

Noise

The resource study area for noise is equivalent to the noise study area evaluated in **Subsection 2.2.7**, and encompasses all developed land uses surrounding the proposed Build Alternative improvements, with a focus on noise-sensitive receivers. The noise study conducted for the project (see **Subsection 2.2.7**) utilized traffic volumes based on the latest version of the Solano-Napa Phase II countywide transportation model (as modified to ensure that the model accurately reflected planned and funded land-use development and transportation projects expected to be in place by 2015 and 2035). As such, the noise study conducted for the project analyzed cumulative conditions within the study area.

For highway transportation projects with FHWA (and the Department, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. As such, this section focuses on the relevant noise thresholds established by the Department. Please see **Chapter 3** of this document for further information on noise impact analysis under CEQA.

In accordance with the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase), or when the future noise level with the project approaches or exceeds the NAC. Sensitive receivers in close proximity to the Build Alternative include residential and hotel uses. The noise study determined that future noise levels within the study area would increase between 0 and 6 dBA under cumulative conditions with the Build Alternative, which is not considered a substantial increase (greater than 12 dBA). However, because the noise levels within the study area would exceed the NAC threshold, noise abatement options were considered, and the preliminary noise abatement analysis and decision is presented in **Subsection 2.2.7**.

The implementation of the noise abatement options determined to be feasible would effectively reduce noise levels below the NAC thresholds to a level that would completely offset the Build Alternative's contribution to cumulative noise levels. The chosen abatement type would be the construction of noise barriers. If, during final design, conditions substantially change, noise barriers might not be provided. The views and opinions of the residents living immediately adjacent to the project area and affected by the traffic noise would be considered in reaching a decision on noise abatement measures. The Department's policy is to not provide noise barriers if 50 percent or more of those affected residents do not want them. The opinions of these residents would be obtained through public and community meetings or other means, as appropriate. The final decision regarding noise abatement would be made upon completion of the project design and public involvement processes.

As discussed in **Subsection 2.2.7**, there are several locations where the cost of the noise abatement options (i.e., construction of a sound wall) would exceed the reasonable allowance for the sensitive receivers that would benefit from the noise reduction. In these locations, the noise abatement and decision analysis does not recommend the implementation of potentially feasible (but not reasonable) noise abatement options. It is also possible that design restrictions (i.e., inadequate sight distance for motorists) or negative public response to the construction of sound walls along Fairgrounds Drive would prevent the implementation of the noise abatement options that are considered both feasible and reasonable. However, if recommended noise abatement is not implemented, cumulative noise levels would increase between 0 and 6 dBA within the study area. In accordance with the Department's Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, an increase in noise levels of this magnitude is not considered a substantial increase (defined as 12 dBA).

Jurisdictional Wetlands and Other Waters

The resource study area for wetlands and other waters is equivalent to the biological study area (BSA) evaluated in **Section 2.3, biological Environment**, and encompasses the physical footprint of the Build Alternative, including all areas where ground disturbance would occur under the Build Alternative (e.g., construction staging areas, demolition,

earthmoving activities, etc.), areas of right-of-way to be obtained for the project, temporary access areas, and an area to the west of Fairgrounds Drive, between Coach Lane and Six Flags Discovery Kingdom Amusement Park. Wetland delineations were conducted within the BSA by consultant biologists on February 16-18, 2011, in accordance with United States Army Corp of Engineers (USACE) guidance. Where portions of wetlands fell within the BSA, the wetland delineation study area boundaries were extended to include the entire water feature.

A field review of the preliminary wetland delineation was conducted with the USACE on December 8, 2011. The USACE concluded that 2.268 acres of water features in the BSA are potential Waters of the U.S., including wetlands. These water features include freshwater marsh, riparian forest mosaic, seeps, ephemeral channels, seasonal wetlands, and perennial streams. The wetlands and other water features identified within the BSA support a variety of wildlife species, including mammals, birds, amphibians, reptiles, and fishes. Marsh habitats can provide habitat for fish nurseries, amphibians, aquatic reptiles, wading birds, waterfowl, and song birds. Riparian woodland can provide foraging, roosting, and nesting habitat for a variety of birds and provide cover and refuge sites for small mammals, amphibians, and reptiles.

Build Alternative impacts to Waters of the U.S., CDFG streambeds, and riparian habitat would primarily be related to the fill needed to create roadbed for the proposed widening of Fairgrounds Drive. As part of the Build Alternative, the existing portion of Rindler Creek north of Coach Lane would be realigned to be immediately east of the widened roadway. The realigned Rindler Creek would be of the same size as the existing creek and revegetated to maintain by hydrological and biological function. The impacted jurisdictional water features to the east of Fairgrounds Drive (totaling approximately 0.621 acres) would be restored on-site at a 1:1 replacement ratio. Impacts to the jurisdictional water features and freshwater marsh communities associated with Rindler Creek would thereby be avoided through the complete on-site replacement of the affected creek segment. The procurement of on-site restoration for impacts to these areas would be permitted and verified by the appropriate regulatory oversight agencies prior to construction. The on-site restoration of Rindler Creek is anticipated to provide satisfactory mitigation for impacts to riparian habitat, including the removal of 151 trees. Restoration on-site will also ensure that functions, such as water flow through the BSA, will continue unchanged.

Table 2.4-1 summarizes the impacts to other potential jurisdictional waters within the BSA (not associated with impacts related to the realignment of Rindler Creek).

Table 2.4-1 Impacts to Potential Jurisdictional Wetlands outside of Proposed Rindler Creek Realignment

Type of Feature	Potential Jurisdictional Acreage
Freshwater Marsh	0.020
Riparian forest mosaic	0
Seep	0
Ephemeral channel	0.002
Seasonal wetland	0.017
TOTAL	0.039

Source: Department, 2012g.

Impacts to potential jurisdictional water features outside of the Rindler Creek realignment area (0.039 acres) would not be restored on site as part of the Build Alternative, and are subject to the provisions of **Mitigation Measure BIO-1** (see **Subsection 2.3.2**). Any impacts to jurisdictional water features that cannot be recreated on-site as part of the relocation of Rindler Creek shall be subject to formalized mitigation requirements of the regulatory agencies. A conceptual restoration and mitigation plan shall be prepared prior to permit applications to regulatory agencies. The on-site restoration of jurisdictional wetlands and other water features affected by the Build Alternative, combined with the implementation of other components of the conceptual restoration and mitigation plan will ensure no net loss of functions and values of these biological resources. As such, the implementation of the avoidance, minimization, and **Mitigation Measure BIO-1** identified in **Subsection 2.3.2** is anticipated to completely offset the Build Alternative's impacts to jurisdictional wetlands and other waters. The Build Alternative would therefore not contribute to a cumulative impact on these biological resources.

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